

Equity Reflection Tool

The Equity Reflection Tool is intended to support CPM teachers as they work to improve their practice by intentionally planning for equitable instruction. Teachers can reflect individually, in combination with other colleagues (perhaps in a PLC setting), or in conversation with a coach or implementation partner. It can also be used as a tool to track progress, identify and celebrate accomplishments, define priorities for goal setting, and suggest opportunities for future growth. Please note that not all of these elements of equitable instruction would be observed in a single lesson.

The document is designed around NCTM's Equitable Mathematics Teaching Practices and is divided into eight sections. Each section aligns equitable teacher actions to each of the Equitable Mathematics Teaching Practices.

Suggestions For Using This Tool:

1. First, read and discuss the Equitable Mathematics Teaching Practices found in *Catalyzing Change* (NCTM 2018, pp. 32-33).
2. Next, consider the description of each Equitable Mathematics Teaching Practice. Ask yourself to what extent each practice is evident in your classroom. Identify areas of strength and opportunities for future growth.
3. Next, choose one Equitable Mathematics Teaching Practice to focus on. Use the descriptions of equitable teacher intentions in this tool to assess both your strengths and areas for growth. At what intentions do you excel? Which do you find most challenging? Where would you like to spend time building your skills? Which teacher intention do you need the most support when implementing?

Promoting Equity by Establishing Mathematics Goals to Focus Learning

Mathematics goals have two components: they describe the mathematical concepts, ideas, or methods that students will understand as a result of instruction, and they identify the mathematical practices that students will be learning (NCTM 2014). Establishing norms for participation involves creating structures to position each and every student as a full participant in mathematics and recognizing that participation builds agency (Turner et al. 2013). Within this teaching practice, teachers must establish classroom norms for participation that positions each and every student as a competent mathematics thinker and valued mathematics contributor. (*Catalyzing Change in High School Mathematics: Initiating Critical Conversations*, NCTM 2018)

The table below outlines teacher intentions that could support a classroom culture that **Promotes Equity by Establishing Mathematics Goals to Focus Learning**:

| TEACHER INTENTIONS - WHAT? | | | |
|--|---|---|---|
| Surface Level Intentionality | | → | Deep Level Intentionality |
| Teacher creates and sustains a classroom environment where every student feels supported to attain the daily learning goals. | Teacher plans instructional decisions to support every student's progress towards the learning goals. | Teacher elicits multiple interpretations, prior knowledge and cultural connections to the learning goals. | Teacher provides opportunities for every student to reflect on and get feedback on their progress towards the lesson goals. |
| Teacher establishes daily learning goals that are accessible to every student without lowering the cognitive demand. | Teacher values both analytical and procedural discourse around the learning goals. | Teacher capitalizes on opportunities to help students build positive mathematical identities. | Teacher maintains high expectations for every student in their role as a warm demander. |
| Teacher monitors for and redirects any deficit language from students or self. | Teacher pays attention to student status when questioning a team's thinking about lesson goals. | Teacher equalizes status through the use of team roles and other strategies. | Teacher shares math authority in order to promote students' math agency, the capacity and willingness to develop their own ideas and questions. |
| | Teacher fosters positive relationships with students through intentional interactions. | | |

Classroom cultures that **Promote Equity by Establishing Mathematics Goals to Focus Learning** may exhibit some of the following intentionally planned instructional strategies:

INSTRUCTIONAL STRATEGIES - HOW?

Promoting Equity by Implementing Tasks that Promote Reasoning and Problem Solving

Effective use of mathematics tasks motivates learning and helps students build new mathematical knowledge through problem solving (NCTM 2014). Tasks that require reasoning, problem solving, and modeling (i.e., tasks with high cognitive demand) result in a positive orientation toward mathematics and demonstrate that the student is a doer of mathematics (Boaler and Staples 2008). Within this teaching practice, teachers must use tasks in ways that develop positive dispositions toward mathematics and build student’s mathematical identity. (*Catalyzing Change in High School Mathematics: Initiating Critical Conversations*, NCTM 2018)

The table below outlines teacher intentions that could support a classroom culture that **Promotes Equity by Implementing Tasks that Promote Reasoning and Problem Solving**:

| TEACHER INTENTIONS - WHAT? | | | |
|--|--|--|---|
| Surface Level Intentionality | | → | Deep Level Intentionality |
| Teacher creates and sustains a classroom environment where all students are accountable for reasoning and problem solving. | Teacher values low floor, high ceiling tasks that promote reasoning and problem solving for every student. | Teacher highlights multiple approaches to problem solving so that students see each other as mathematicians. | Teacher formatively assesses every student’s reasoning and provides appropriate feedback. |
| Teacher ensures that tasks are accessible to every student while maintaining the cognitive demand. | Teacher pays attention to student status when questioning a teams’ thinking or approaches to classwork. | Teacher invites students to share cultural connections to classroom tasks. | Teacher maintains high expectations for every student in their role as a warm demander. |
| Teacher monitors for and redirects any deficit language from students or self. | Teacher fosters positive relationships with students through intentional interactions. | Teacher capitalizes on opportunities to help students build positive mathematical identities. | Teacher shares math authority in order to promote students’ math agency, the capacity and willingness to develop their own ideas and questions. |
| | | Teacher equalizes status through the use of team roles and other strategies. | |

Classroom cultures that **Promote Equity by Implementing Tasks that Promote Reasoning and Problem Solving** may exhibit some of the following intentionally planned instructional strategies:

INSTRUCTIONAL STRATEGIES - HOW?

Promoting Equity by Using and Connecting Mathematical Representations

Mathematical representations are of particular importance in helping students to advance their understanding of mathematical concepts and procedures, make sense of problems, and engage in mathematical discourse (NCTM 2014). The use of multiple representations allows students to draw on multiple sources of knowledge (Boston et al. 2017). Drawing on multiple sources of knowledge acknowledges the mathematical, social, and cultural resources that students bring to mathematics. Teachers who use this teaching practice effectively validate the resources that students bring to mathematics and connect instruction with students' experiences and interests. (*Catalyzing Change in High School Mathematics: Initiating Critical Conversations*, NCTM 2018)

The table below outlines teacher intentions that could support a classroom culture that **Promotes Equity by Using and Connecting Mathematical Representations**:

| TEACHER INTENTIONS - WHAT? | | | |
|---|--|--|---|
| Surface Level Intentionality | | → | Deep Level Intentionality |
| Teacher creates and sustains a classroom environment where all students use and connect multiple representations. | Teacher pays attention to student status when examining a team's representations. | Teacher draws attention to the less formal representations in order to deepen the connections between the five mathematical representations. | Teacher leverages varied representations to support status in the classroom by positioning students as mathematically competent. |
| Teacher creates accessibility through the use of multiple representations. | Teacher values the five math representations equally. | Teacher uses multiple representations to allow students to draw on mathematical, social, and cultural sources of knowledge. | Teacher maintains high expectations for every student in their role as a warm demander. |
| Teacher encourages connections between representations to maintain cognitive demand. | Teacher fosters positive relationships with students through intentional interactions. | Teacher capitalizes on opportunities to help students build positive mathematical identities. | Teacher shares math authority in order to promote students' math agency, the capacity and willingness to develop their own ideas and questions. |
| Teacher monitors for and redirects any deficit language from students or self. | | Teacher equalizes status through the use of team roles and other strategies. | |

Classroom cultures that **Promote Equity by Using and Connecting Mathematical Representations** may exhibit some of the following intentionally planned instructional strategies:

INSTRUCTIONAL STRATEGIES - HOW?

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Promoting Equity by Facilitating Meaningful Mathematical Discourse

Discourse gives students opportunities to share ideas and clarify understandings, construct mathematical arguments, develop a language to express mathematical ideas, and learn the mathematical perspectives of others (NCTM 2014). Through discourse, students realize that their work and thinking serve an important role in the study of mathematics, thus positioning themselves and others as mathematically competent and reducing hierarchical status in mathematics classrooms. (Boston et al. 2017). In implementing this teaching practice, teachers create structures that position students as mathematically competent and capable of sharing their mathematical thinking, connecting with peers to understand other's mathematical ideas, and participating in mathematical arguments. (*Catalyzing Change in High School Mathematics: Initiating Critical Conversations*, NCTM 2018)

The table below outlines teacher intentions that could support a classroom culture that **Promotes Equity by Facilitating Meaningful Mathematical Discourse**:

| TEACHER INTENTIONS - WHAT? | | | |
|--|--|---|---|
| Surface Level Intentionality | | → | Deep Level Intentionality |
| Teacher creates and sustains a classroom environment where every student is supported in maintaining mathematical discourse. | Teacher elicits students' ideas and strategies and creates space for them to present their ideas and strategies. | Teacher provides opportunities for every student to share their thinking, to receive criticism and feedback, and to critique the reasoning of others. | Teacher disrupts talk that leads to unproductive conceptions about what it means to do mathematics. |
| Teacher uses individual think time to support every student in meaningful mathematical discourse. | Teacher pays attention to student status imbalances when listening to discourse within a team. | Teacher listens for and hears the math content within language or speech patterns that are culturally influenced. | Teacher positions students as capable by inviting them to unpack or revoice each other's thinking. |
| Teacher monitors for and redirects any deficit language from students or self. | Teacher understands that every student benefits from meaningful mathematical discourse. | Teacher capitalizes on opportunities to help students build positive mathematical identities. | Teacher maintains high expectations for every student in their role as a warm demander. |
| | Teacher fosters positive relationships with students through intentional interactions. | Teacher equalizes status through the use of team roles and other strategies. | Teacher shares math authority in order to promote students' math agency, the capacity and willingness to develop their own ideas and questions. |

Classroom cultures that **Promote Equity by Facilitating Meaningful Mathematical Discourse** may exhibit some of the following intentionally planned instructional strategies:

INSTRUCTIONAL STRATEGIES - HOW?

Promoting Equity by Posing Purposeful Questions

Purposeful questioning encourages students to explain and reflect on their own and others' thinking, and it allows teachers to discern what students know and understand and to use these insights to adapt lessons to meet the needs of students (NCTM 2014). Students who are consistently asked questions requiring them to explain their reasoning are positioned differently from students who are consistently asked questions not requiring explanation. The types of questions that students are asked can support positive mathematical identity and agency by positioning students as thinkers and doers of mathematics (Aguirre, Mayfield-Ingram, and Martin 2013). Teachers implementing this teaching practice pose purposeful questions and are mindful of which students they are asking which types of questions and whose ideas are privileged during discourse. (*Catalyzing Change in High School Mathematics: Initiating Critical Conversations*, NCTM 2018)

The table below outlines teacher intentions that could support a classroom culture that **Promotes Equity by Posing Purposeful Questions**:

| TEACHER INTENTIONS - WHAT? | | | |
|---|--|---|---|
| Surface Level Intentionality | | → | Deep Level Intentionality |
| Teacher creates and sustains a classroom environment where questioning and wait time is the norm. | Teacher pays attention to student status imbalances by noting who responds to the questions asked. | Teacher uses strategies, such as no hands up policy, that ensures every student has time to think and respond to questions. | Teacher uses student responses to elevate status. |
| Teacher poses questions that make the mathematics accessible to each student within a team. | Teacher uses thinking strategies to give individual students time to process before team or whole-class discussions. | Teacher's poses questions that maintain a high level of cognitive demand for every student. | Teacher leverages individual student responses using talk moves (pressing, linking, inviting, repeating, revoicing, probing thinking) accompanied with wait time, to generate more questions for deeper thinking. |
| Teacher monitors for and redirects any deficit language from students or self. | Teacher asks open ended questions, allows for wait time and then elicits responses from multiple students. | Teacher capitalizes on opportunities to help students build positive mathematical identities. | Teacher maintains high expectations for every student in their role as a warm demander. |
| | Teacher fosters positive relationships with students through intentional interactions. | Teacher equalizes status through the use of team roles and other strategies. | Teacher shares math authority in order to promote students' math agency, the capacity and willingness to develop their own ideas and questions. |

Classroom cultures that **Promote Equity by Posing Purposeful Questions** may exhibit some of the following intentionally planned instructional strategies:

INSTRUCTIONAL STRATEGIES - HOW?

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Promoting Equity by Building Procedural Fluency from Conceptual Understanding

Conceptual understanding and procedural fluency are critical and connected components in the development of mathematical proficiency (NCTM 2014). Mathematics instruction that focuses solely on remembering and applying procedures advantages students who are strong in memorization skills and disadvantages students who are not (Boston et al. 2017). Consequently, focusing primarily on the memorization of procedures may convey the message that mathematics is not about knowing and doing but instead is about memorizing. By contrast, teachers who make a practice of building fluency from conceptual understanding routinely connect conceptual understanding with procedural fluency so that students can make meaning of the mathematics and develop a positive disposition toward mathematics. (*Catalyzing Change in High School Mathematics: Initiating Critical Conversations*, NCTM 2018)

The table below outlines teacher intentions that could support a classroom culture that **Promotes Equity by Building Procedural Fluency from Conceptual Understanding**:

| TEACHER INTENTIONS - WHAT? | | | |
|--|--|--|---|
| Surface Level Intentionality | | → | Deep Level Intentionality |
| Teacher creates and sustains a classroom environment where both procedural fluency and conceptual understanding are valued. | Teacher recognizes that students with procedural fluency or the ability to arrive at an answer quickly may be assigned higher status by self or peers. | Teacher encourages math agency through a balanced focus on both procedural fluency and conceptual understanding. | Teacher focuses closure activities on conceptual understanding. |
| Teacher provides accessibility by making connections to conceptual understanding when a student is struggling with procedural fluency. | Teacher values both conceptual understanding and procedural fluency. | Teacher creates assessments that equally assess procedural fluency and conceptual understanding. | Teacher invites sharing of cultural differences in order to help students relate to concepts in multiple ways. |
| Teacher monitors for and redirects any deficit language from students or self. | Teacher fosters positive relationships with students through intentional interactions. | Teacher capitalizes on opportunities to help students build positive mathematical identities. | Teacher maintains high expectations for every student in their role as a warm demander. |
| | | Teacher equalizes status through the use of team roles and other strategies.. | Teacher shares math authority in order to promote students' math agency, the capacity and willingness to develop their own ideas and questions. |

Classroom cultures that **Promote Equity by Building Procedural Fluency from Conceptual Understanding** may exhibit some of the following intentionally planned instructional strategies:

INSTRUCTIONAL STRATEGIES - HOW?

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Promoting Equity by Supporting Productive Struggle in Learning Mathematics

Teaching that embraces productive struggle provides opportunities for students to delve deeply into relationships among mathematical ideas and to develop understanding that leads them to apply their learning to new problem situations (NCTM 2014). This teaching practice involves giving students time to grapple with mathematical ideas (Hiebert and Grouws 2007). Grappling with ideas provides opportunities for students to develop a sense of agency by taking ownership of their mathematical thinking. Working within this teaching practice, teachers allow time for students to engage with mathematical ideas and provide supports through purposeful questioning to support perseverance and identity development. (*Catalyzing Change in High School Mathematics: Initiating Critical Conversations*, NCT, 2018)

The table below outlines teacher intentions that could support a classroom culture that **Promotes Equity by Promoting Productive Struggle in Learning Mathematics**:

| TEACHER INTENTIONS - WHAT? | | | |
|---|---|--|---|
| Surface Level Intentionality | | → | Deep Level Intentionality |
| Teacher creates and sustains a classroom environment where productive struggle is valued, expected and supported. | Teacher pays attention to status issues that are created when choosing strategies to manage struggle. | Teacher expects every student to record and provide written evidence of their productive struggle. | Teacher invites students to reflect on their willingness to struggle and how that affects their math identity. |
| Teacher supports productive struggle while maintaining a high cognitive demand. | Teacher provides the opportunity for every student to struggle. | Teacher capitalizes on opportunities to help students build positive mathematical identities. | Teacher supports productive struggle for each student as a means to learning high-level, meaningful mathematics. |
| Teacher encourages and supports students to advocate for themselves. | Teacher fosters positive relationships with students through intentional interactions. | Teacher equalizes status through the use of team roles and other strategies. | Teacher maintains high expectations for every student in their role as a warm demander. |
| Teacher monitors for and redirects any deficit language from students or self. | | | Teacher shares math authority in order to promote students' math agency, the capacity and willingness to develop their own ideas and questions. |

Classroom cultures that **Promote Equity by Supporting Productive Struggle in Learning Mathematics** may exhibit some of the following intentionally planned instructional strategies:

INSTRUCTIONAL STRATEGIES - HOW?

Promoting Equity by Eliciting and Using Evidence of Student Thinking

Eliciting and using students' ideas require that teachers attend to more than just whether an answer is right or wrong. This teaching practice requires focusing on common patterns of reasoning and attending to how students understand a task and how ideas are developed over time (NCTM 2014). Whose ideas are elicited and used in the classroom has strong implications for mathematical identity and agency. Eliciting mathematical ideas from students who are perceived as always giving the right answer positions correctness as more valuable than mathematical thinking. Consequently, students may not share their thinking and may participate only when they believe that they may have a correct answer. By contrast, teachers who make a practice of eliciting and using evidence of students' mathematical thinking position each and every student as mathematically competent. (*Catalyzing Change in High School Mathematics: Initiating Critical Conversations*, NCTM 2018)

The table below outlines teacher intentions that could support a classroom culture that **Promotes Equity by Eliciting and Using Evidence of Student Thinking**:

| TEACHER INTENTIONS - WHAT? | | | |
|--|---|---|--|
| Surface Level Intentionality | | → | Deep Level Intentionality |
| Teacher creates and sustains a classroom environment where every student's thinking is valued. | Teacher promotes a culture in which mistakes are expected, inspected and respected. | Teacher assigns competence to students by highlighting unanticipated and novel responses. | Teacher elicits thinking from students with a variety of cultural backgrounds to draw out unique sources of knowledge. |
| Teacher solicits thinking from every student. | Teacher pays attention to student status when eliciting a teams' thinking. | Teacher capitalizes on opportunities to help students build positive mathematical identities. | Teacher uses a variety of formative assessment techniques to determine the progress of each and every student. |
| Teacher monitors for and redirects any deficit language from students or self. | Teacher values students as knowers and doers of math. Teacher fosters positive relationships with students through intentional interactions. | Teacher equalizes status through the use of team roles and other strategies. | Teacher maintains high expectations for every student in their role as a warm demander. Teacher shares math authority in order to promote students' math agency, the capacity and willingness to develop their own ideas and questions. |

Classroom cultures that **Promote Equity by Eliciting and Using Evidence of Student Thinking** may exhibit some of the following intentionally planned instructional strategies:

INSTRUCTIONAL STRATEGIES - HOW?

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